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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GORDON, CARLENE MICHELLE

ART UNIT PAPER NUMBER

2124

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,040

Applicant(s)

MUSSER ET AL.

Examiner

Carlene Gordon

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/12/2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the application filed on September 28, 2001.

Claims 1-20 are pending in the application.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show "YES and NO" symbols before the process proceeds to steps 426 and 424 of Figure 4, respectively, as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheets should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and

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informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because in Figure 4, the arrow denoting "YES" to step 448 points to step 442, although it should point to step 440.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

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Reference no. 216 on pg. 15 line 19 of the specification should be 214 to adhere to the reference signs in the drawings and the remainder of the specification.

Reference no. 110 on pg. 12 line 13 of the specification should be 100 to adhere to the reference signs in the drawings and the remainder of the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 7, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goody (USPN 6,097,721), hereafter "**Goody**", and further in view of Northcutt et al. (USPN 6,678,741), hereafter "**Northcutt**".

7. As to claim 1:

Goody discloses cards located in a multiplexer, the multiplexer having a plurality of network units connected thereto over fiber optic connections; and cards located in one of the plurality of network units (Fig. _3; col. 4 lines 1-6,

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"HDT... a multiplexer which transmits signals to ONUs via fiber optic cables"; col. 3 lines 5-12, "communication devices that utilize... cards").

Goody does not expressly disclose:

- a) The cards are firmware cards.
- b) Identifying software on the cards.
- c) Determining if the software on the cards is a prescribed version, and if not, updating the software.

Northcutt discloses identifying software on cards to determine if the software is a prescribed version, and if not, updating the software (col. 5 lines 30-49, "determine if firmware is synchronized", "determine if version is same as indicated", "If not same, firmware is updated..."). Northcutt discloses that the cards where the software is embodied are firmware cards (col. 10 lines 45-65, "received code... application code", "Application code embodied in... ROM cards").

Goody and Northcutt are analogous art because they relate to communication between devices over a network. At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the method of updating firmware as taught by Northcutt (Fig. 1; col. 5 lines 30-49; col. 10 lines 45-65) across a telecommunications network and communicating devices (cards in a multiplexer and network units) as disclosed by Goody (Fig. _3). The motivation would have been to maintain synchronization (Northcutt, col. 1) of the devices of Goody by updating the firmware as taught by Northcutt on the cards located in the devices of Goody (col. 3 lines 9-12, "communication-medium

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terminating devices") such that the multiplexer and network units of Goody can properly communicate to transmit and/or receive the signals as taught by Goody (col. 2 lines 58-67), by correcting incompatibilities of the protocol between devices, and further to ensure that the network devices are always operating with the common firmware as taught by Northcutt in col. 1 lines 32-50 and col. 8, lines 65-67.

8. As to claims 2 and 3:

Rejection of claim 1 is incorporated and further Northcutt discloses identifying a version for the software (col. 5 lines 30-49, "if version of software is as indicated") in order to update the firmware for synchronization purposes (col. 2 lines 23-35).

9. As to claim 7:

Rejection of claim 1 is incorporated and further Northcutt discloses a computer readable medium having computer executable instructions stored thereon (col. 10, lines 45-65).

10. As to claim 17:

Goody discloses **cards located in a multiplexer**, the multiplexer having a plurality of network units **in communication** with it over fiber optic connections; and **cards located in one of the plurality of network units** (Fig. _3; cols. 3-4;

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col. 4 lines 1-6, "HDT... a multiplexer which transmits signals to ONUs via fiber optic cables"; col. 3 lines 5-12, "communication devices that utilize... cards").

Goody does not expressly disclose:

a) The cards are firmware cards.

b) Updating to the same version, a plurality of firmware cards located in a multiplexer, and updating to the same version on at least one network unit in communication with the multiplexer.

Northcutt discloses a method synchronizing firmware by updating it to the same version (col. 5 lines 30-49, "If versions are not the same, firmware is updated"). Northcutt discloses that the cards where the software is embodied are firmware cards (col. 10 lines 45-65, "received code... application code", "Application code embodied in... ROM cards").

Goody and Northcutt are analogous art because they relate to communication between devices over a network. At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the method of updating firmware (Fig. 1; col. 5 lines 30-49; col. 10 lines 45-65) across a telecommunications network and communicating devices (cards in a multiplexer and network units) as disclosed by Goody (Fig. _3). The motivation would have been to maintain synchronization (Northcutt, col. 1) of the devices of Goody by updating the firmware as taught by Northcutt on the cards located in the devices of Goody (col. 3 lines 9-12, "communication-medium terminating devices") such that the multiplexer and network units of Goody can properly communicate to transmit and/or receive signals as taught by Goody (col. 2 lines 58-67), by

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correcting incompatibilities of the protocol between devices, and further to ensure that the network devices are always operating with the common firmware as taught by Northcutt in col. 1 lines 32-50 and col. 8, lines 65-67.

11. As to claim 20:

Goody discloses a system comprising processor for executing computer executable instructions (col. 6 lines 1-6, "microprocessor is used to program"); and memory for storing computer executable instructions, wherein said memory has stored therein computer readable executable instruction for performing the following steps (col. 9 lines 13-17, "in memory, microprocessor stores").

Goody discloses cards located in a multiplexer, the multiplexer having a plurality of network units connected thereto over fiber optic connections; and cards located in one of the plurality of network units (Fig. _3; col. 4 lines 1-6, "HDT... a multiplexer which transmits signals to ONUs via fiber optic cables"; col. 3 lines 5-12, "communication devices that utilize... cards").

Goody does not expressly disclose:

- a) The cards are firmware cards.
- b) Identifying software on the cards.
- c) Determining if the software on the cards is a prescribed version, and if not, updating the software.

Northcutt discloses a method identifying software on cards to determine if the software is a prescribed version, and if not, updating the software (col. 5 lines 30-49, "determine if firmware is synchronized", "determine if version is same as

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indicated”, “If not same, firmware is updated...”). Northcutt discloses that the cards where the software is embodied are firmware cards (col. 10 lines 45-65, “received code... application code”, “Application code embodied in... ROM cards”).

Goody and Northcutt are analogous art because they relate to communication between devices over a network. At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the method of updating firmware (Fig. 1; col. 5 lines 30-49; col. 10 lines 45-65) across a telecommunications network and communicating devices (cards in a multiplexer and network units) as disclosed by Goody (Fig. _3). The motivation would have been to maintain synchronization (Northcutt, col. 1) of the devices of Goody by updating the firmware as taught by Northcutt on the cards located in the devices of Goody (col. 3 lines 9–12, “communication-medium terminating devices”) such that the multiplexer and network units of Goody can properly communicate to transmit and/or receive signals as taught by Goody (col. 2 lines 58-67), by correcting incompatibilities of the protocol between devices, and further to ensure that the network devices are always operating with the common firmware as taught by Northcutt in col. 1 lines 32-50 and col. 8, lines 65-67.

12. Claims 4-6, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goody and Northcutt as applied to claims 1 and 17 above, and further in view of Parry et al. (USPN 6,175,552), hereafter “**Parry**”.

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13. As to claim 4:

Rejection of claim 1 is incorporated and further Goody in view of Northcutt do not explicitly disclose that the firmware cards of the multiplexer comprise an optical interface unit card wherein software will be identified.

However, Parry teaches a multiplexer comprising an optical interface unit card (Fig. 4, 32E).

Parry and Goody are analogous art because they both disclose a telecommunications network teaching a multiplexer attached over fiber optic connections to other network units. At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to include in the multiplexer of Goody and firmware cards of Northcutt an optical interface unit card as the one disclosed in Parry because an optical interface unit card provides a communication-medium terminating device over a fiber optic channel taught to be present in Goody (col. 3 lines 5-12), and as taught by Parry, incorporate supervisory/control units which supervise the operation of the multiplexer (Fig. 4: col. 4, lines 29-40).

14. As to claim 5:

Rejection of claim 1 is incorporated and further Goody in view of Northcutt do not explicitly disclose that the firmware cards of the multiplexer comprise an optical multiplexing unit card wherein software will be identified.

However, Parry teaches a multiplexer comprising several optical unit cards (Fig. 4), including demultiplexing unit cards.

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Parry and Goody are analogous art because they both disclose a telecommunications network teaching a multiplexer attached over fiber optic connections to other network units. At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to include in the multiplexer of Goody an optical multiplexing unit card which would be an obvious variation of a demultiplexing unit card of Parry which operates to provide interfaces to local customers (col. 4 lines 38-40). The motivation would have been to provide the multiplexing functionality of the HDT and serve as a communication-medium terminating device between the HDT and ONU controlling access to the received downstream signals from the PSTN, ATM and other networks to the transmission media and to transmit the received signal to the appropriate ONU via the appropriate fiber optic cable as taught by Goody (col. 4 lines 1-7)

15. As to claim 6:

Rejection of claim 1 is incorporated and further Goody in view of Northcutt do not explicitly disclose that the firmware card located in one of a plurality of network units is an optical interface unit card wherein software will be identified.

However, Parry in view of Northcutt teaches a network unit comprising an optical interface unit card (Fig. 4, 32E).

Parry and Goody are analogous art because they both disclose a telecommunications network teaching a network units attached over fiber optic connections. At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to include in the network unit of Goody an optical

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interface unit card as the one disclosed in Parry because an optical interface unit card provides a communication-medium terminating device over a fiber optic channel taught to be present in Goody (col. 3 lines 5-12), and as taught by Parry, incorporate supervisory/control units which supervise the operation of a network unit (Fig. 4: col. 4, lines 29-40).

16. As to claim 18:

Rejection of claim 17 is incorporated, and further Goody in view of Northcutt do not explicitly disclose that the firmware cards in the multiplexer are a plurality of at least one of an optical interface unit card and an optical multiplexing unit card.

However, Parry teaches a multiplexer comprising optical interface unit cards (Fig. 4, 32E).

Parry and Goody are analogous art because they both disclose a telecommunication's network teaching a multiplexer attached over fiber optic connections to other network units. At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to include in the multiplexer of Goody firmware cards of Northcutt as optical interface unit cards as the ones disclosed in Parry because an optical interface unit card provides a communication-medium terminating device over a fiber optic channel taught to be present in Goody (col. 3 lines 5-12), and as taught by Parry, incorporate supervisory/control units which supervise the operation of the multiplexer (Fig. 4: col. 4, lines 29-40):

17. As to claim 19:

Rejection of claim 17 is incorporated, and further Goody in view of Northcutt do not explicitly disclose that the plurality firmware cards located on at least one network unit comprises a plurality of optical interface unit cards that will be updated to the same version.

However, Parry teaches a network unit comprising optical interface unit cards (Fig. 4, 32E).

Parry and Goody are analogous art because they both disclose a telecommunications network teaching network units attached over fiber optic connections. At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to include in the network unit of Goody and firmware cards of Northcutt optical interface unit cards as the ones disclosed in Parry because an optical interface unit card provides a communication-medium terminating device over a fiber optic channel taught to be present in Goody (col. 3 lines 5-12), and as taught by Parry, incorporate supervisory/control units which supervise the operation of a network unit (Fig. 4: col. 4, lines 29-40).

18. Claims 8-12, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goody (USPN 6,097,721), hereafter "**Goody**", in view of Northcutt et al. (USPN 6,678,741), hereafter "**Northcutt**", and further in view of Reddy ("Prospects for Fiber to the Home (FTTH)"), hereafter "**Reddy**".

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19. As to claim 8:

Goody discloses cards located in a multiplexer, the multiplexer having a plurality of network units connected thereto over fiber optic connections; and cards located in one of the plurality of network units and each of the plurality of network units having a plurality connections extending therefrom to end users (Fig. _3; cols. 3-4; col. 4 lines 1-6, "HDT... a multiplexer which transmits signals to ONUs via fiber optic cables"; col. 3 lines 5-12, "communication devices that utilize... cards").

Goody does not expressly disclose:

- a) Identifying software comprised in a multiplexer.
- b) Identifying the software on each of the plurality of network units.
- c) Determining if the software on each the plurality of network units is compatible with the software on the multiplexer; and if the software on one of the plurality of network units is not compatible with the software on the multiplexer, updating the software on the one of the plurality of network units.
- d) The plurality connections extending therefrom to end users are fiber optic.

Northcutt discloses identifying software on cards of a plurality of network devices to determine if the software is a compatible, and if not, updating the software (col. 5 lines 30-49, "determine if firmware is synchronized", "determine if version is same as indicated", "If not same, firmware is updated..."; col. 9 lines 1-15, "permit compatible communication"). Northcutt discloses that this software is

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embodied on firmware cards (col. 10 lines 45-65, "received code... application code", "Application code embodied in... ROM cards").

Goody and Northcutt are analogous art because they relate to communication between devices over a network. At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the method of updating firmware (Fig. 1; col. 5 lines 30-49; col. 10 lines 45-65) across a telecommunications network and communicating devices (cards in a multiplexer and network units) as disclosed by Goody (Fig. _3). The motivation would have been to maintain synchronization (Northcutt, col. 1) of the devices of Goody by updating the firmware as taught by Northcutt on the cards located in the devices of Goody (col. 3 lines 9-12, "communication-medium terminating devices") such that the multiplexer and network units of Goody can properly communicate to transmit and/or receive signals as taught by Goody (col. 2 lines 58-67), by correcting incompatibilities of the protocol between devices, and further to ensure that the network devices are always operating with the common firmware as taught by Northcutt in col. 1 lines 32-50 and col. 8, lines 65-67.

Furthermore, Goody teaches using fiber optic connections for general purpose over a Fiber to the Curb (FTTC) network in Fig. 3. Reddy however teaches fiber optic connection extending to the home (pg. 1 paragraph 1 "Fiber to home..."). It would have been obvious to one of ordinary skill in the art of telecommunication networks to extend the fiber optic connections further to the end user because fiber technology provides a higher bandwidth, and further improves reliability given this media is resistant to electromagnetic interference

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and, therefore, leads to lowest operational costs as suggested by Reddy (pg. 1 paragraph 1 "Fiber to home... lowest operational costs").

20. As to claims 9 and 10:

Rejection of claim 8 is incorporated and further Northcutt discloses identifying a version for the software (col. 5 lines 30-49, "if version of software is as indicated") in order to update the firmware for synchronization purposes (col. 2 lines 23-35).

21. As to claim 11:

Rejection of claim 8 is incorporated and further Northcutt discloses, determining if a software version on each of the plurality of network units is compatible with a software version on the multiplexer (col. 9 lines 1-17, "if versions of a particular firmware are compatible").

22. As to claims 12 and 14:

Rejection of claim 8 is incorporated and further Northcutt discloses, determining the version of software on a firmware cards in the multiplexer and the plurality of network units (col. 9 lines 1-17, "if versions of a particular firmware are compatible"; col. 10 lines 45-65, "received code... application code", "Application code embodied in... ROM cards").

23. As to claim 16:

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Rejection of claim 8 is incorporated and further Northcutt discloses a computer readable medium having computer executable instructions stored thereon (col. 10, lines 45-65).

24. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goody, Northcutt, and Reddy as applied to claims 12 and 14 above, and further in view of Parry et al. (USPN 6,175,552), hereafter "**Parry**".

25. As to claim 13:

Rejection of claim 12 is incorporated and further Goody in view of Northcutt do not explicitly disclose that the firmware card in the multiplexer is one of an optical interface unit card and an optical multiplexing unit card.

However, Parry teaches a multiplexer comprising an optical interface unit card (Fig. 4, 32E).

Parry and Goody are analogous art because they both disclose a telecommunications network teaching a multiplexer attached over fiber optic connections to other network units. At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to include in the multiplexer of Goody and firmware cards of Northcutt an optical interface unit card as the one disclosed in Parry because an optical interface unit card provides a communication-medium terminating device over a fiber optic channel taught to be present in Goody (col. 3 lines 5-12), and as taught by Parry, incorporate

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supervisory/control units which supervise the operation of the multiplexer (Fig. 4: col. 4, lines 29-40):

26. As to claim 15:

Rejection of claim 14 is incorporated and further Goody in view of Northcutt do not explicitly disclose that the firmware cards in the network units comprises an optical interface unit card.

However, Parry teaches a network unit comprising an optical interface unit card (Fig. 4, 32E).

Parry and Goody are analogous art because they both disclose a telecommunications network teaching network units attached over fiber optic connections. At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to include in the network unit of Goody and firmware cards of Northcutt an optical interface unit card as the one disclosed in Parry because an optical interface unit card provides a communication-medium terminating device over a fiber optic channel taught to be present in Goody (col. 3 lines 5-12), and as taught by Parry, incorporate supervisory/control units which supervise the operation of a network unit (Fig. 4: col. 4, lines 29-40).

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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- a) Marconi Manual, "Disc S FiberStar Element Management System," Job Aids, 363-257-252, Issue 2, May 200 teaches it known to upgrade OMU/OIU cards with new software.
- b) Matti Rantanen, Fiber-to-the Home, 11/10/1998 teaches telecommunications network disclosed as invention well known in the art.
- c) Kirouac et al. (USPN 5, 155, 847) teaches method for updating software at remote locations (abstract).
- d) McCaleb et al. (USPN 6, 751, 794) teaches updating to prescribed version of software (abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlene Gordon whose telephone number is (571) 272-3722. The examiner can normally be reached on Mon.-Fri. 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.G. / C.D.

Kakali Chaki
KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100